

Committee Workshop on Transportation Energy Demand Forecasts and Options to Reduce Petroleum Fuel Use

**Staff Presentation
Options to Reduce Petroleum Fuel Use
May 17, 2005**



Overview

- Background – 2003 Energy Report and Transportation Energy
- Petroleum Reduction Options
- Cost and Benefit Analysis Methodology
- Summary of Analyses Results
- Staff Findings



Background

- 2003 transportation energy demand goals
 - Reduce on-road gasoline and diesel demand to 15 percent below 2003 demand level by 2020 and maintain for the foreseeable future
 - Increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030



Petroleum Reduction Options

- Efficiency Options

- Examples: Improved Vehicle Fuel Economy, Improved Maintenance Practices, More Efficient On-road Diesel Trucks, Light-duty Diesel Vehicles

- Alternative Fuel Options

- Examples: Electric Battery Technologies, Grid-connected HEV, Ethanol Blend (E10), LNG/CNG in Medium and Heavy Vehicles, Gas-to-Liquid Fuel, Renewable Diesel



Cost and Benefit Methodology

- Economic comparison of petroleum reduction options with business-as-usual (BAU) options
- Key annual incremental expenditures and benefits are determined for each comparison, discounted over time, and summed over the forecast period
- Key results in present value net benefit and petroleum fuel reduction



Cost and Benefit Methodology

- A: Direct Non-environmental Benefit (consumer costs and benefits, indicates market competitiveness)
- B: Change in Government Revenue (primarily fuel excise taxes used for transportation infrastructure benefits)
- C: Direct Environmental Net Benefit (avoided environmental damage)
- D: External Cost of Petroleum Dependency (avoided military cost and economic cost of petroleum dependency)
- Direct Net Benefit: $A+B+C+D$



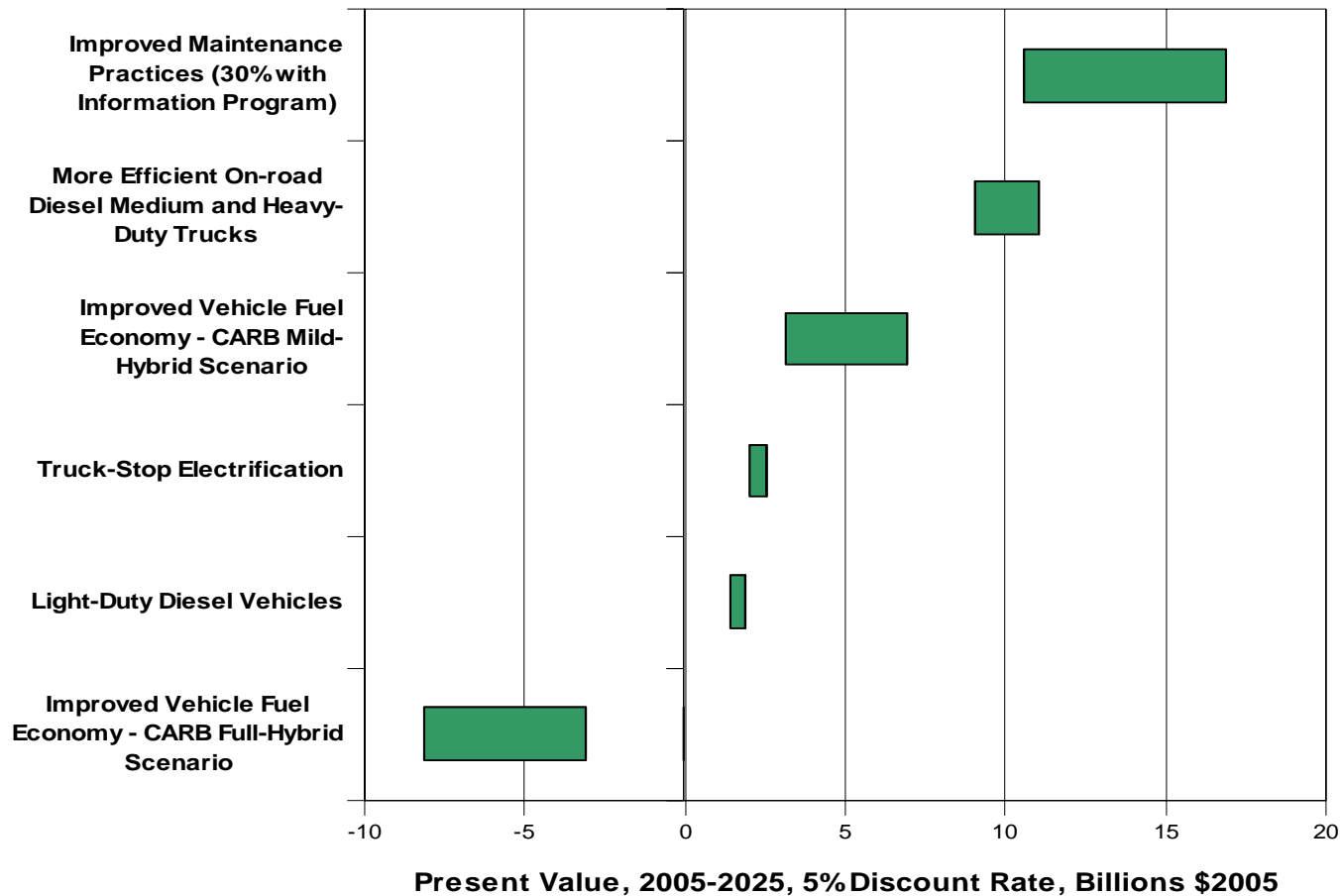
Summary of Analyses Results

- Direct net benefit comparisons of efficiency and alternative fuel options
- Relative magnitudes of non-environmental and environmental benefits and external cost of petroleum dependency
- Petroleum reduction portfolios and scenarios



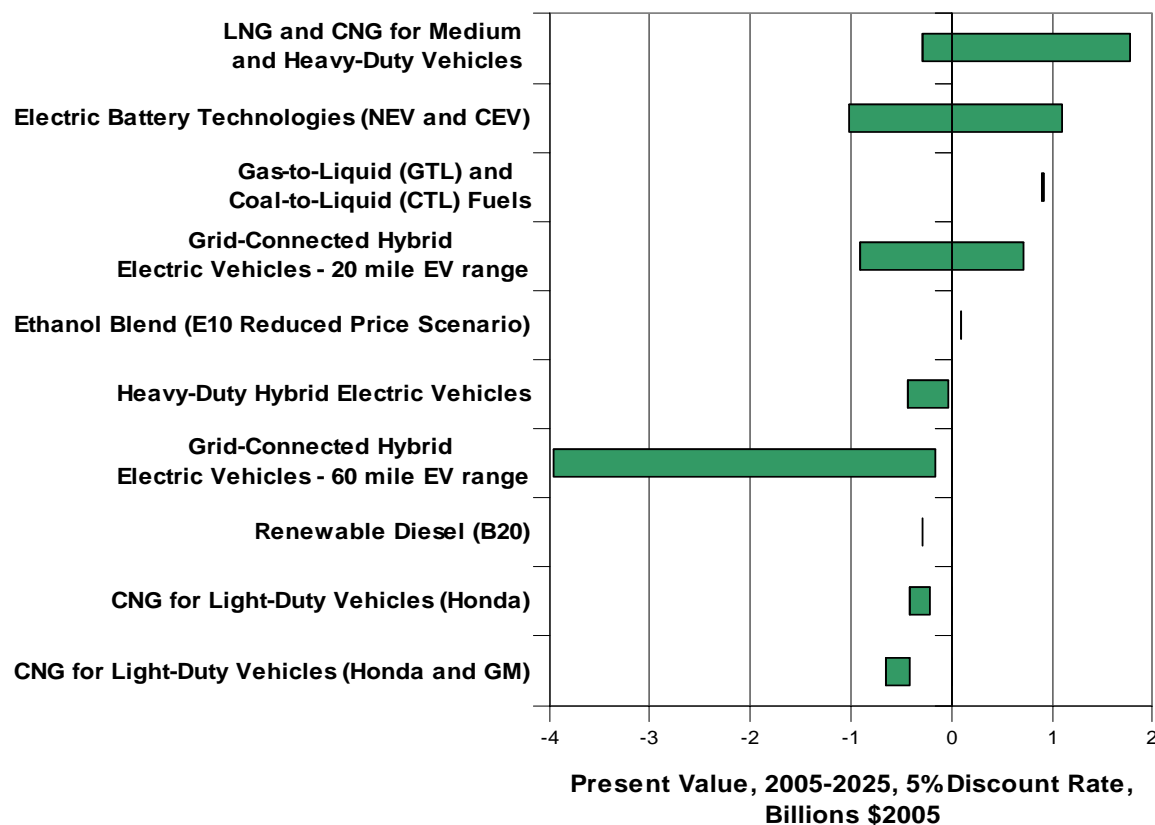
Direct Net Benefit Comparisons

Petroleum Reduction and Benefit for Selected Efficiency Scenarios



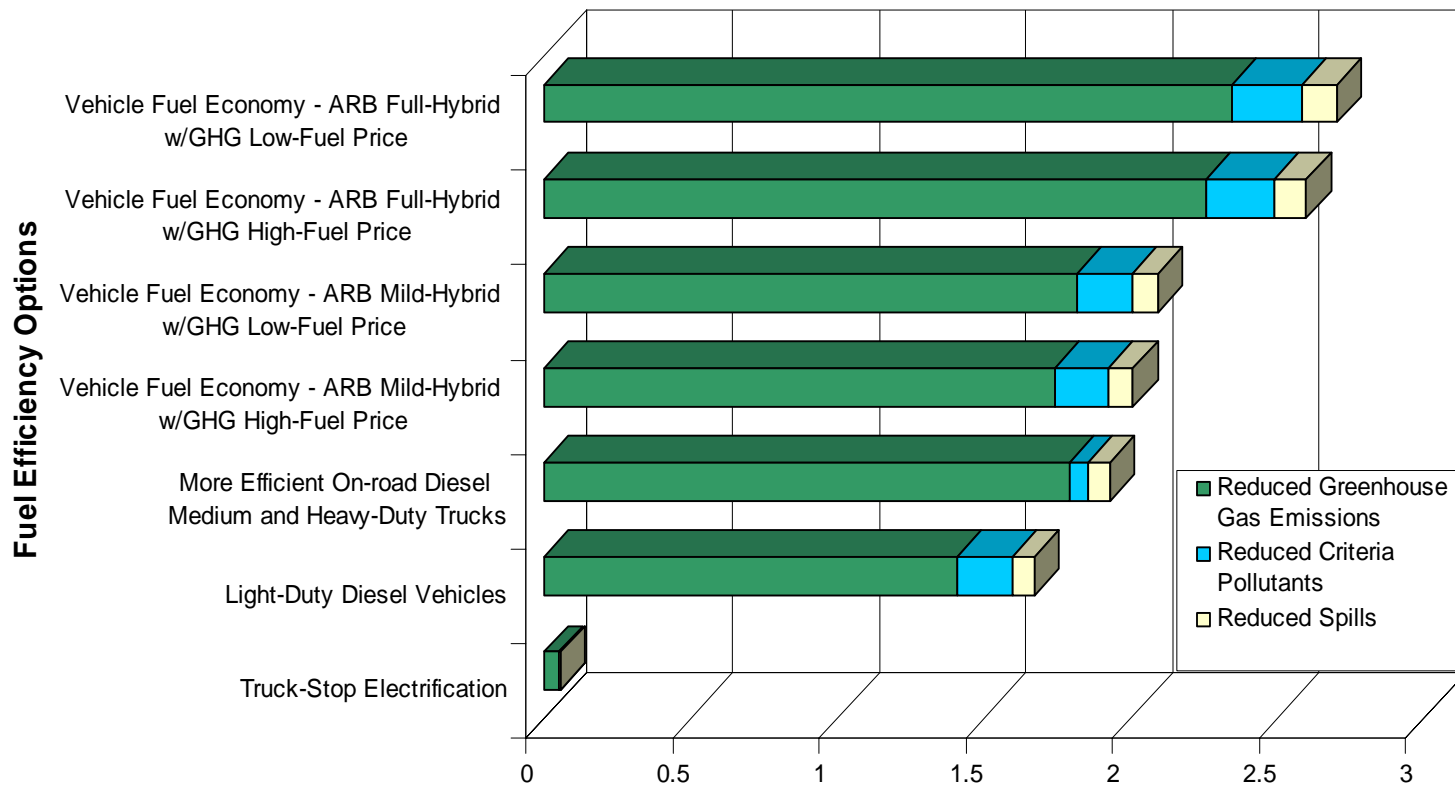
Direct Net Benefit Comparisons

Petroleum Reduction and Benefits for Selected Alternative Fuel Scenarios



Environmental Benefit Elements

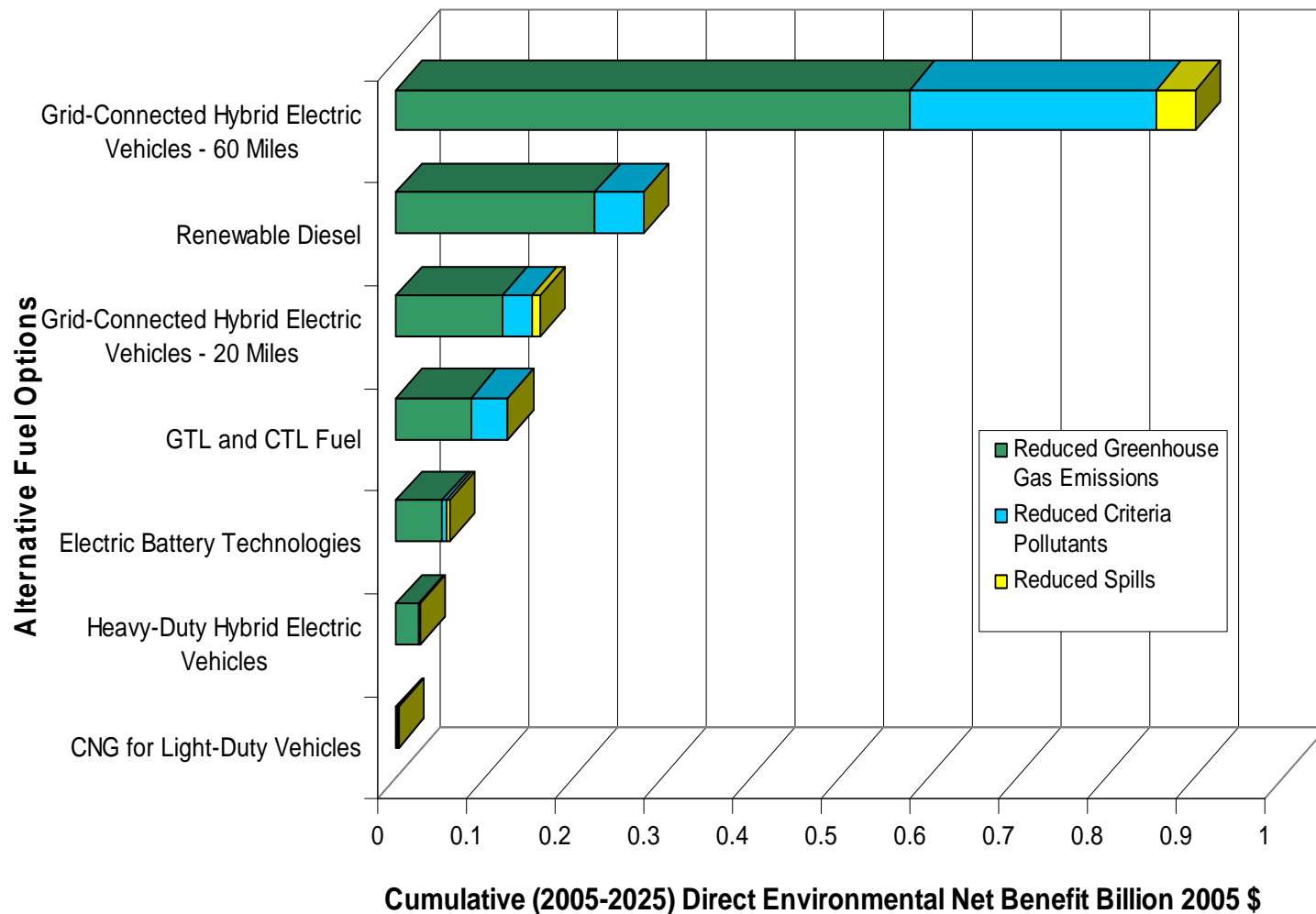
Direct Environmental Net Benefit of Fuel Efficiency Options



Cumulative (2005-2025) Direct Environmental Net Benefit Billion 2005 \$

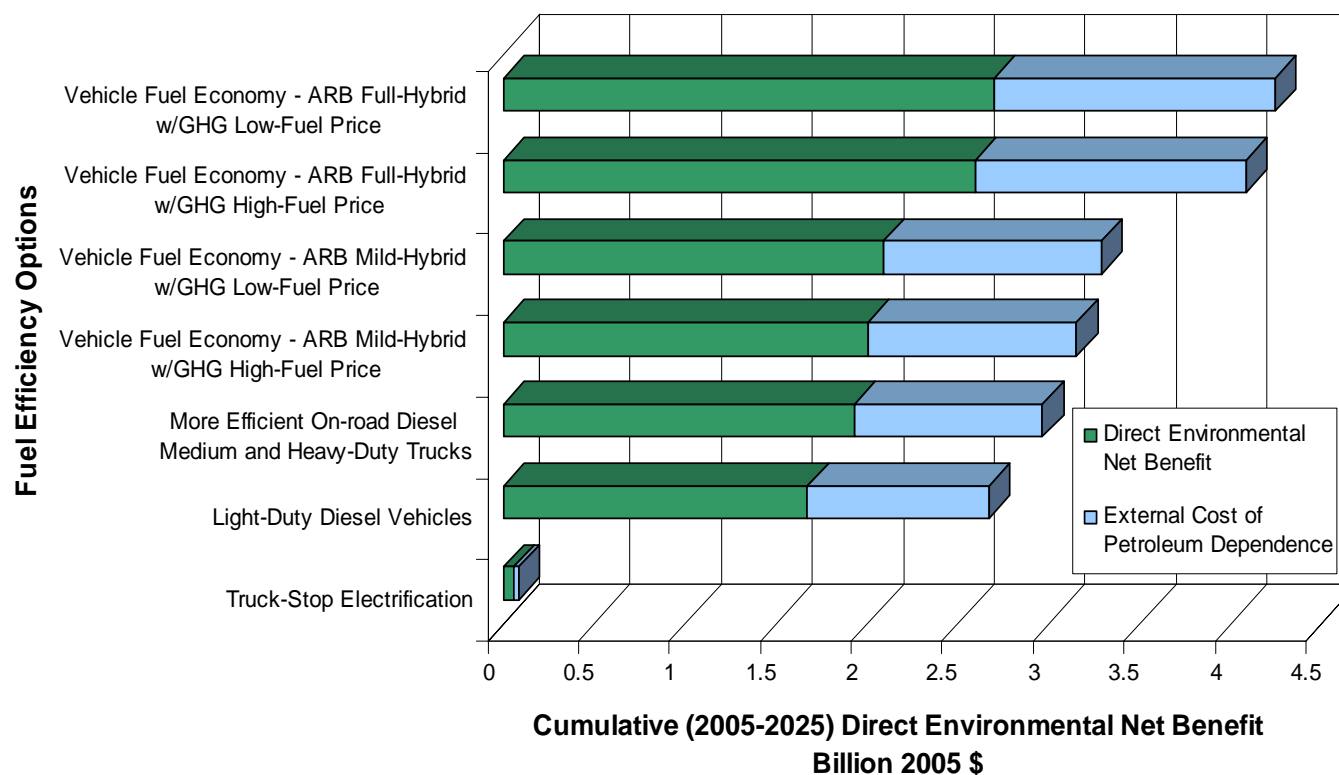


Environmental Benefit Elements



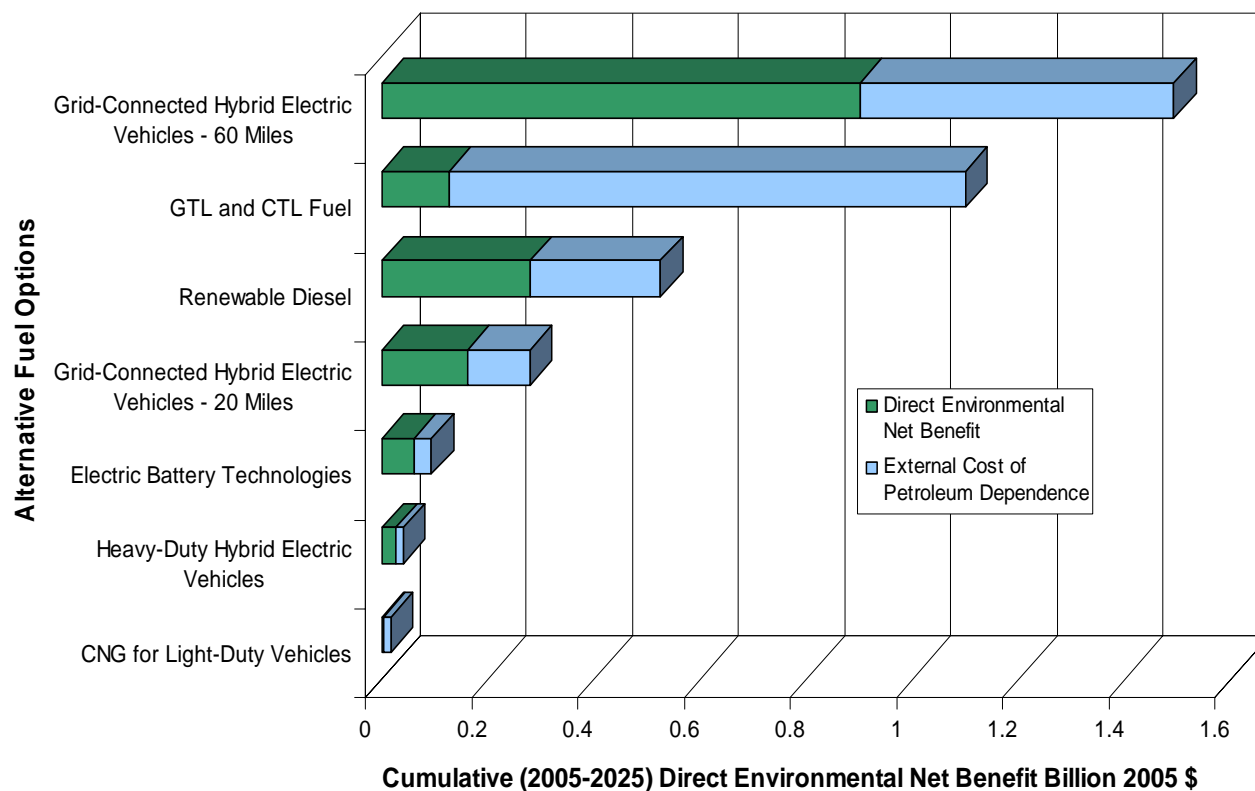
Environmental Benefit and External Cost of Petroleum Dependency

Direct Environmental Net Benefit and External Cost of Petroleum Reduction of Fuel Efficiency Options



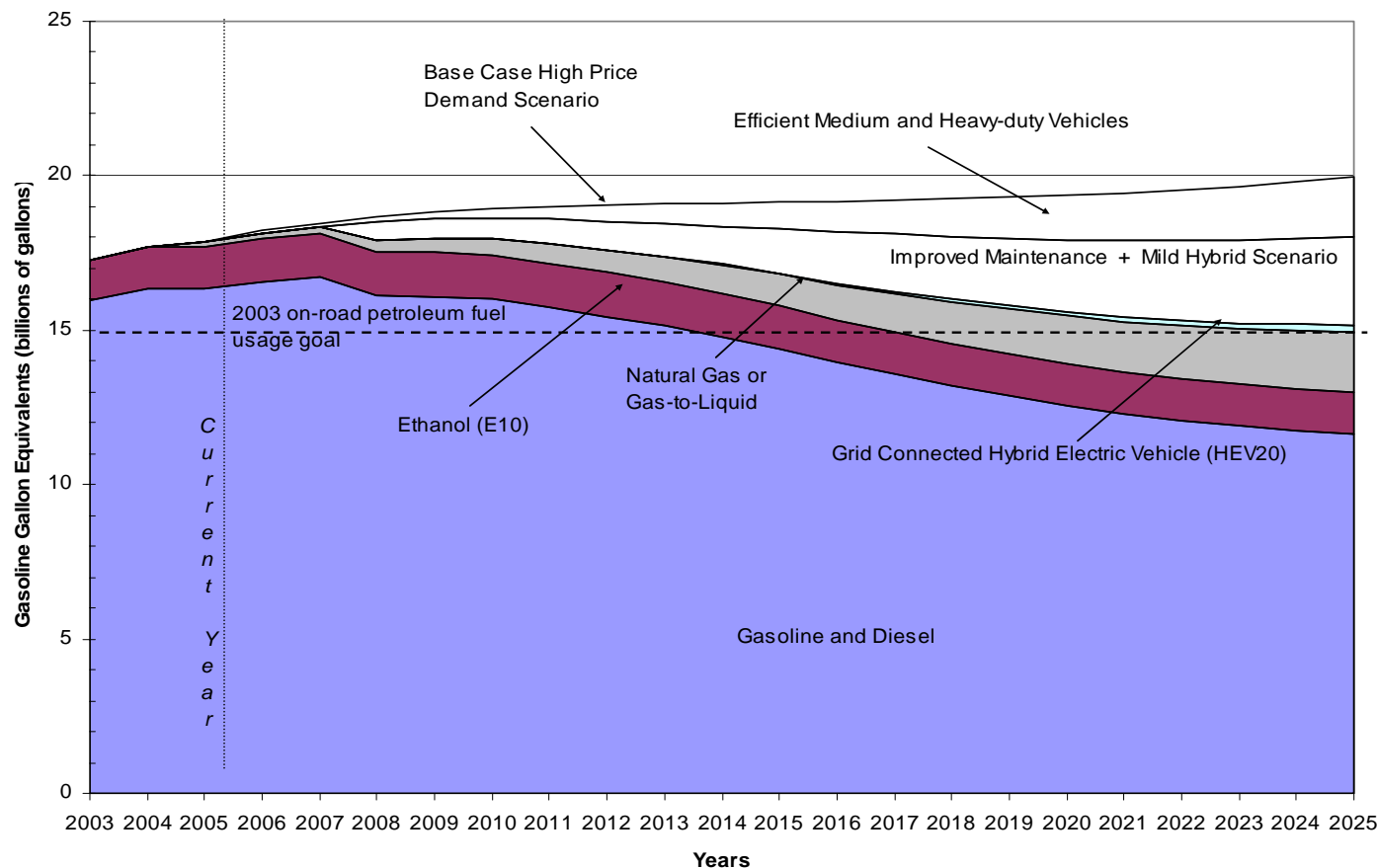
Environmental Benefit and External Cost of Petroleum Dependency

Direct Environmental Net Benefit and External Cost of Petroleum Reduction of Alternative Fuel Options



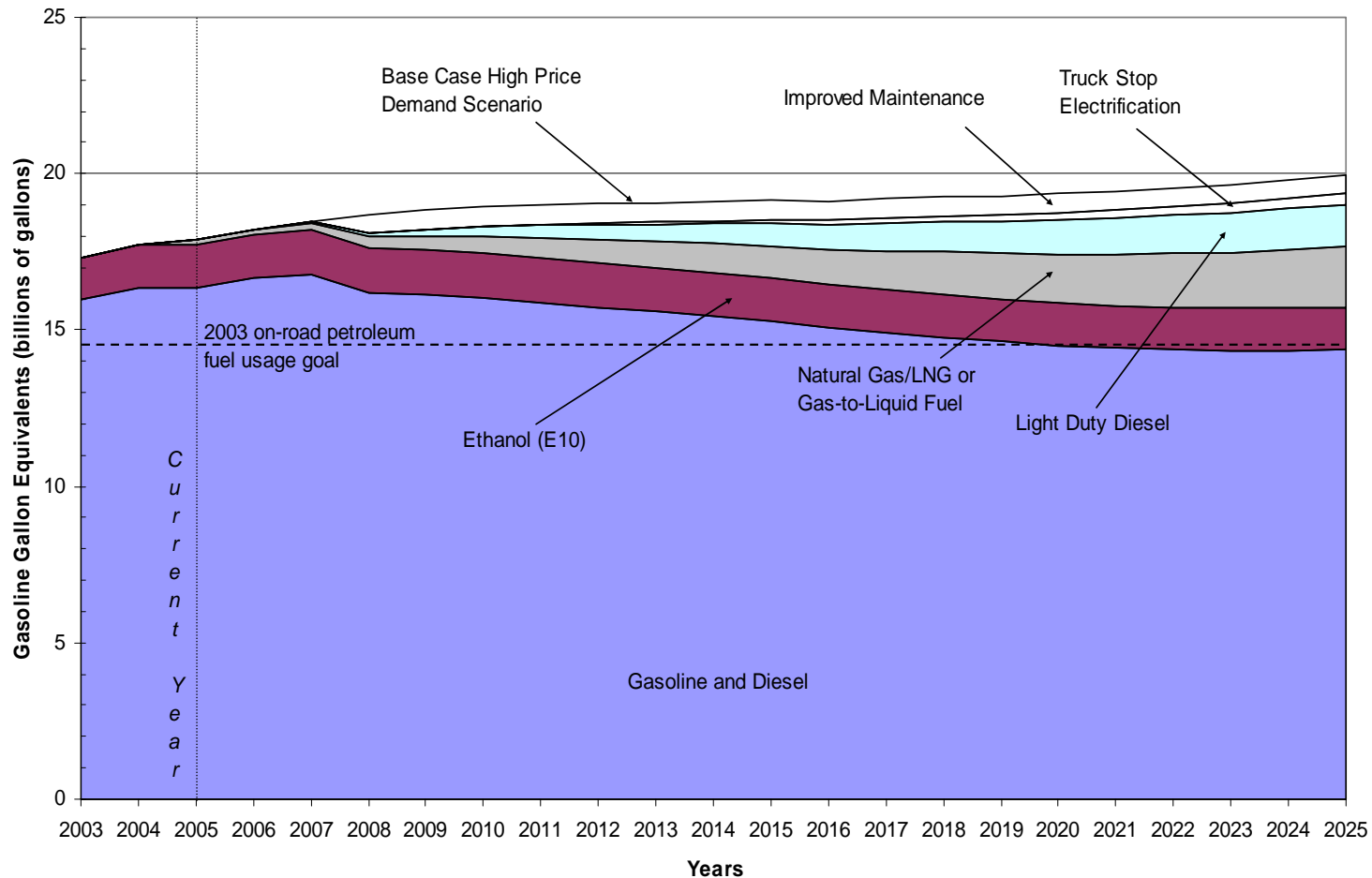
Petroleum Reduction Portfolio and Scenarios

Base Case Petroleum Fuel Demand and Petroleum Reduction Scenario #1



Petroleum Reduction Portfolio and Scenarios

Base Case Petroleum Fuel Demand and Petroleum Reduction Scenario #2



Staff Findings

- To meet Petroleum Reduction Goals a combination of efficiency and alternative fuel options is needed
- Efficiency measures provide the greatest benefit for a given investment
- Increased use of alternative fuel options requires different degrees of public support and development



Reminder for Comments

- In the subject line or first paragraph of your comments, refer to “Docket 04-IEP-1A and *2005 Energy Report Petroleum Reduction Options*”
- California Energy Commission
Dockets Unit, Attn: Docket No. 04-IEP-1A
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
- Instructions in the Workshop Public Notice
http://www.energy.ca.gov/2005_energypolicy/notices/2005-05-17_workshop.html
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